Spring 2017

The Graduate School Collaborative

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Abstract

This thesis proposes a solution to the disconnect between today's designers and makers. Specifically geared towards the profession of architecture, these discussions should be applied in any process of making. After providing a historical reading of the crafted object and the people involved in making it, the paper proposes a new way to perceive craft in today's world. When defined as an indexical quality, both in the mathematical and in the pointing sense described by Charles S. Pierce, the craft of an object becomes an accessible and efficient tool for the analysis and comparison of artifice.

Keywords: craft, artifice, human-made object, design, architecture.

Executive Summary

Human made objects are marked in many ways by the hands and minds of their creators. Once a person makes an object, someone can observe, do, or learn something with it. Any process of making is thus a manifestation of craft. In architecture schools today, students and faculty breathe of their own work and thought, and rarely look outside their studios for knowledge and feedback. The growth of such reclusion over the past two centuries causes students, faculty, and professionals to dismiss "craft" within their field.

This thesis aims to amend architects' perception of craft by finding a fresh contemporary definition and creating a setting for its discovery and sharing. Though our reading of craft was originally limited to architecture, we realized that such a scope contradicts the purpose of the thesis. Studying local craft and talking with local craftspeople has helped us broaden our concept of what craft can be and do. We thus discuss many different types of craft and imagine various applications of non-architectural craft within architecture.

We are a two-person team: Jake Copich and Stanislav Nedzelskyi. We have designed a process for working that comments on craft within our own work. Though the written parts of this thesis are by Stanislav, all our arguments and conclusions are a joint effort.

We engage with "craft" in two ways: by designing a graduate School of Architecture in downtown Syracuse, New York, and by carefully considering how the concept of "craft" is defined and applied. All our design is drawn by hand, with a few digital additions. We plan every drawing, craft its content and layout, execute it, and then examine and correct it in red pen. The year-long process of this design serves as a series of footprints, one coming from another, that shapes and generates our subsequent conclusions.

Unlike today's reclusive architectural institution, our new School of Architecture opens its doors to the public. By placing the School downtown, we make it accessible for the local community of makers and city-goers. By redefining a usually generic program and adding new spaces geared towards the craftsperson, we support interaction between designers and makers. This new hybrid school will bring fresh insight to the work of today's architect. Students – budding architects – and faculty alike will benefit from experiencing the work and thought of craftspeople firsthand, and the local community will participate in the growth of contemporary architecture.

While our School creates a space for the reinvention and rediscovery of craft, we also want to redefine craft for the architect. During a detail-oriented stage of our design, we found that we could refer to "craft" by defining an index that would be used to assess the human involvement in any object. The living room table has been cut and put together by someone; the clothes we wear and the dinners we eat are a product of someone's mind and hand.

By refining this new view of craft and proposing the designs for our hybrid School of Architecture, we reconnect a sample of architects with today's world of making. We do not aim to bring architects back to a time when craftsmanship was strong within the field of building. Rather, we ask today's architects to engage with an expanded and ever changing culture of craft.

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Introduction

The term “craft” is a broad sweep across many disciplines. Everything from a state dinner to a wooden door has a degree of craft. The word defines both an action and a quality: “The carpenter delicately details the table legs” and “That table is intricately carved”. In a way, the word “craft” cannot express fully the concept it represents: so many actions of thought, design, and execution involve a craft, often unique to that specific action.

Though architects seldom discuss craft, they perceive it as a binary, linear concept: high or low, and executed by a single person – a craftsman – probably by hand. To a degree, an architect talking about craft imagines only the non-architectural applications of the word. When the scope of craft does include possible contemporary applications, craft stands as a mere quality, similar to texture or transparency. This thesis argues that craft should be read as a matrix-like index, a highly descriptive backbone to any human-made object. Inspired by technological and philosophical advances present in congruent topics, this refreshed view of craft will help architects engage with an ever-changing concept of craft.

The current assumed components of craft – the product, the craftsperson, and the aesthetic qualifiers – result in a limited reading. This is dangerous in any field, professional or casual. The discipline of architecture seems, at times, at risk of rendering the word obsolete in its slowly building distaste towards anything “craft”. Yet it is not just the ornamentation so vehemently criticized by Adolf Loos. It includes the Meisian joint and the Corbusian concrete, and all descendants of the modernist philosophy that pushed architecture away from a “crafted” world.

Since this thesis is of an architectural nature, most of its defense and application will be within that field. That said, the topic of “craft” is broad, and the craft index should be applicable

in any other design- and product-oriented fields. Therefore, many applications will be considered for examples and tests.

The Divorce of Design and Craft
The role of the craftsperson in architectural history.

We can understand a linear method of craft by looking at the times before, during, and after the separation of design and execution. Though the relationship decayed slowly, it culminated at the end of the industrial revolution. Edward Ford records John Ruskin as lamenting that all craftsmen of his day had become mere "slaves", mechanically executing whatever designs they were given.[1] At Ruskin's time, the turn of the century, the distinction between architect and builder was clearest. Previous work had been mostly conceptual for the architect and highly tangible for the builder, but the latter was expected to contribute greatly to the final look and feel of things. A good example is the House of the Chimeras in Kiev, a duet between its architect and builder. Where Ruskin complains that any detail, large or fine, now depends completely upon the architect, Wladyslaw Gorodetsky could expect much of his design to happen spontaneously within the hands and minds of his "project team".[2] Ruskin's complaints highlight a growing distaste towards "craft": the craftsperson merely executes what the architect draws and contributes little to the "design" of the process.

One possible cause of Ruskin's mechanical craftspeople may have been the architecture profession itself. Spurred on by industrialization and the sudden new ability to provide extremely accurate specifications, architects and clients began demanding exact execution of all work. David Edmonds and John Eidinow note that Ludwig Wittgenstein made one of his contractors cry (199) after demanding the sizes of finished doors and windows corrected to millimeter

[1] *The Details of Modern Architecture*, pg.7
[2] *ProfiDom* discusses the relationship between Gorodetsky and his builder and sculptor, Emilio Sala.

precision. By holding their craftspeople to such seemingly high standards, architects converted the craftsperson into a mere builder.

The Lone Craftsman

The result of Ruskin's dilemma was two-fold. Architecture either completely "discarded" craft or fully embraced it. An outside observer might well be surprised that movements so opposite in nature – modernism and the Arts & Crafts movement – could happen at the same time. Ironically, the pull of the first towards minimalism did little to eliminate craft. In both cases, the lone architect became the lone craftsman, satisfying the gap left by the divorce of design and craft. Mies van der Rohe, creating his ceiling joint, expertly chose what to hide from the observer. Only through careful design and orchestration could Mies achieve his goals, as the architect and the builders would carefully mask the necessary parts of a building, a task requiring a high level of controlled craft. When those necessary elements were neglected – in design or execution – the result included such mishaps as leaking roofs at the Bilbao Guggenheim[3] and the Ray and Maria Stata Center at MIT.[4]

The simultaneous Arts & Crafts movement was another attempt to bring back the craftsman. The problem of skilled labor never improved, however, rendering a true return to the pre-Ruskin days impossible. Thus, the leaders of Arts & Crafts resorted to designing their own craft. The David B. Gamble House by Charles and Henry Greene is a good example of a successful Arts & Crafts private residence. Edward Ford describes the great amount of craft in every aspect of the building, from the expression of the large Oregon pine beams to the intended

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[3] John Hawkinson
[4] Andrea Gerlin

"rudeness" of the exterior shingles.[5] The architects approached their work with much care to maintain consistency. The interior of the building presents a complex array of true and ornamental structure, all exquisitely designed to provide a multi-layered, powerful feel for a space that is actually quite simple. Because of such examples of high craft, Ford points out that the Greene brothers' work "required extensive coordination between architect and contractor",[6] spiking costs and turning away clients. Many architects of the Arts & Crafts movement faced a similar fate. Since the architect was now fully in charge of craft, little actual craft could ever happen without exclusive control of the project; control that required an increasing amount of time and money. Moreover, critics point out that the movement misinterprets local customs and implements designs arbitrarily and out of context – another outcome of the architect becoming fully responsible for managing and designing craft.

These "lone craftsmen" of the early 20th century formed the notion of craft commonly misused today. Even the solution to performative design – seemingly outside the scope of craft – fell to reclusive top-down thought. Ludwig Wittgenstein wrote specifications for a heating unit so precise that the craftspeople of his own country could not execute them.[7] Architects and thinkers refuse to work creatively around the problem and embrace divorced craft. The legacy of such schools as Taliesin – the School of Frank Lloyd Wright founded to teach his philosophy of architecture – remains active today. Taliesin still teaches a culture of traditional craft, ignoring the death of the Ruskin craftsman, and laying all the responsibilities of both design and execution on the architect.

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[5] *The Details of Modern Architecture, page 147*
[6] Page 155.
[7] Edmonds and Eidinow, page 200.

Craft before Ruskin

A lingering perception of a craft that used to be.

The craftspeople at the center of Ruskin's lament have been the core of human-made artifact since the earliest of projects. A traditional relationship between craftspeople and designers has thus only recently disappeared, otherwise dominating much of human history.

Some archaeologists agree that the plumb and bob methodology is the most logical approach to building the Great Pyramid at Giza. John Romer suggests that the central Chimney of the pyramid, while also serving as a metaphysical connection to the afterlife, provided a sheltered space for the plumb and bob to create a reference point for the rest of the edifice.[8] While no true "architects" were present in the construction of the edifice, an engineering team would be in charge of this sheltered plumb and bob and its readings. Much of the labor, then, was delegated to the large temporary population at Giza. The relationship, then, between designer and maker was direct – the designers provided measurements and confirmations on work executed by the builders, but had to trust the craft of the project to builders and masons.

The same relationship was still true during the Renaissance. Ross King describes Brunelleschi's relationship with his workers as key to understanding the building of the Duomo of Santa Maria del Fiori.[9] Filippo Brunelleschi's exclusive knowledge of the physics required to build a scaffolding-less structure crowned him the chief of the builder team. However, the sheer scale of the project and the available conceptual materials of the time prevented separating design and build work. Although Brunelleschi could draft some pieces of his work, much of his design he applied first hand, working in tow with his team. Specifications for machinery, masonry, and finishes were dictated almost exclusively by the various craftspeople on site.

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[8] *The Great Pyramid: Ancient Egypt Revisited,* page 273.

[9] *Brunelleschi's Dome: How a Renaissance Genius Reinvented Architecture*, page 57.

Brunelleschi burned all his designs, but the surviving written evidence suggests that, though he envisioned the pieces required, he allowed his builders to craft all final forms.

Craft has thus remained in the hands of the craftsperson for much of human history. After industrialization, it became the intellectual property of the designer. But in our ever-changing world, that can no longer be the case. We argue for the return of a craftsperson-driven craft, a craft that we can learn to perceive as a human index.

The Craft Index

Redefining craft for a changing world.

We define several words and concepts for the following discussion. An "object" will be any human-made artifact, tangible or intangible, permanent or temporary. This ensures that "objects" include both cakes and songs. Member and element are interchangeable terms that define characteristics of an object. Maker, craftsperson, and human refer to the person who has made the object. An audience, viewer, or user then encounters, observes, or uses the object.

An "index", as used in this thesis, has two definitions. Charles S. Pierce describes the first in good detail in his "Theory of Signs", a treatise that breaks down representative logic into icons, indices, and symbols. Icons and symbols denote an object by either representing it or taking its place – a stick figure is an icon for a man and a *ro-chi* (℞) is a symbol for a religious system. The icon looks like the object it represents, while the symbol does not. Pierce writes that the index is a special type of icon, one that is "not the mere resemblance of its Object… but [an] actual modification of it by the Object".[10] While the icon represents a thing, the index both represents and points at the thing.

[10] "A Theory of Signs", page 102.

The second definition is mathematical. An index is a matrix for layers of information. If imagined as an ever-changing stack of papers, the index can receive papers, someone can look through and sort the papers, or add or remove papers. A similar concept in programming is called an array. An index has any number of definitive qualities – elements that define its number or stature or width – and performative qualities – elements that define its application.

Both definitions of the index allow it to have multiple members. A member belongs to a Pierce index if it is either representative of the object or part of the object. A member belongs in a mathematical index if it is assigned to that index, as in the above paper example. Between the Pierce definition of the "pointing index" and the mathematical "sorting index", an index can point at a concept through a varying number of its members' qualities. Instead of limiting craft to a singular decorative quality in specific "crafty" projects, as denounced by architects, we define craft as a multi-member index that points to its maker. Now, it can serve as both a representation of and a reference to its maker. Similarly, a catalogue is a simplified diagram of a library and, simultaneously, a map for its books.

The scope of the craft index extends beyond architecture. Donald Norman summarizes that "all artificial things are designed" (4) in his *Design of Everyday Things*. Any made object, regardless of its scale, complexity, or nature, has a property of craft. Thus, the index maps human thought on all human-made objects and serves as a unifying medium for seemingly disparate things: a piece of bluesy jazz, a dinner of local cuisine, a piece of corten steel.

Exploring certain index members allows for comparisons across disciplines. Of course, this list changes from object to object. We highlight below members that we find to be omnipresent. These can change slightly in their definitions from object to object, but paint a general picture of what components of craft there can be.

Quality: Through talent, skill, and prior experience, a human imbues an object with some level of craft. The quality of a finished object is itself a smaller index of the human, one that points to that human's characteristics that have been cultivated over time. We say a dancer is talented when the dance is exquisite.

Quantity: Through iteration, research, and commitment, a human imbues an object with some level of craft. That maker's effort can be minimal or extensive. It might take years to write a book or paint a painting; it might take multiple drafts to craft an essay.

Success: A maker intends an object to have some purpose. Even when simple or passive, a purpose gives meaning to an object. A statuette might do nothing more than delight passer-bys, but catching the attention of a viewer still counts as a purpose.

Two simple tests of the above members. A machine applies human thought to a process when it mass-produces a plastic folding-leg table. The table still functions as a table, and features some level of design quality and quantity. Though not as impacted by a human as, say, a carved oak dining table would be, the plastic table exemplifies a functional and straightforward method of craft. A human delicately carves a small statuette. Regardless of the accuracy of its likeness, it succeeds in eliciting some feelings from observers, and displays some skill and effort of thought and hand.

The Craft of All Things

A design of everyday things. "You have trouble opening doors?" – Don Norman

The craft index can serve many purposes. It can evaluate a single object or a group. It can allow for comparisons across disciplines, especially seemingly intangible ones. Finally, it stresses that the world of craft is ever-changing and expanding. Even if some "crafts" go out of use with time, the human mind and hand will always be creating something.

Perceiving an indexical craft in any artificial thing helps us evaluate the priorities of its maker. Don Norman expresses his frustration with doors in his *Design of Everyday Things* – so much so, he writes, that a specific confusing glass door has been termed the "Norman Door" (3). The invisible glass door issue is widespread, actually. Newly installed doors in the Renzo Piano addition to the Kimbell Art Museum in Ft. Worth had to have bright red lines painted to prevent users from walking straight into them. The tenants downplayed the careful design of the doors' appearance to ensure functionality. Norman argues the failure of these doors is due to poor design, but we can learn a different story from their craft. A door of some material receives human touch. Its maker dedicates some level of skill and some amount of time to its creation. A failure in its operability or "discoverability", as Norman terms it, is due to a designer's preference towards looks rather than function. Similarly, a ceramicist could design a teapot with its handle on the same side as the spout. In both cases, the craft index of the finished object stresses looks and disregards function, failing the *success* member of the index.

To apply the craft index, we do not need a tangible object. A performance of an opera, a reading of a poem, or a progression of a dance are all crafted "objects". We evaluate a reading of a Robert Frost poem by the author.[11] Although he writes in a specific meter, Frost carefully breaks his own system to bring about a different tone and meaning to his writing. The writing itself, of course, is a highly crafted object. Yet Frost has reconsidered the reading of his words multiple times and spoken them with a unique skill to convey their nature. Similarly, a dancer exhibits great care in moving on stage. The finesse of the dance grows over time and practice, but is also a function of skill and talent.

As technology changes, it modifies the scope of human creativity. Even so, any thing created by a human will still fall under the craft index. Over the last twenty years, the Internet

[11] The Internet Multicasting Service provides a collection of readings of poems by the author.

has become a common medium for many users. Websites, blogs, personal channels, and virtual portfolios populate the world web. Twenty years ago, with limited bandwidth and serviceability, these pages mostly provided information with little media or graphics. Today, even a common user with little knowledge of code can put together a convincing website. People continuously upload new video content to public platforms and their own sites. As the sphere of creatable virtual objects expands, it will include virtual reality, higher levels of customization and variety. Though new and seemingly different than a chair or a wall, these objects will continue to exhibit the same principles of the craft index.

The Craft Index and Architecture

Makers and designers in dialogue.

Perceiving the craft index is only one step in engaging architects with craft. Because architects now shy away from craft and work mostly with builders, the problem is multi-fold and deep. There exists a disconnect between the two communities: the profession of architecture and the world of the craftsperson.

The following panels[12] imagine a solution to that disconnect: a graduate School of Architecture in downtown Syracuse, New York. This school would provide a platform for the two communities to meet and interact while participating in the same process of making. Both an architect and a craftsperson – a ceramicist or a metalsmith – regularly go through the same process of iteration. A person designs or makes a thing, then discusses it with peers or analyzes it, and then stores that iteration or displays it to the larger community. By joining over this

[12] see Appendix.

process and actively learning from each other, both communities would benefit and grow towards a reconnected understanding of craft and design.

Uniting these communities will also directly help the craft of architectural thought. The linear approach of today's architecture schools – design, discuss, iterate, submit, and forget – could become more scientific. A scientific paper suggests a problem and proposes a solution, tested through hypothesis and trial, and a good paper frequently ends with a suggestion on further study. Human work is prone to both error and discovery. In the world of craft, that work cannot be conclusive. Thus, our new school would embrace a recursive "loop of making" that is common to the craftsperson community. By making, gathering to discuss, and then archiving work – placing a curated selection on a cycle of display and storage – an architect acknowledges all work to be a part of a larger creative process.

The downtown location of the new school and its stress on a common process of making could help reconnect architects with the people for whom they design. The school would also serve as a platform for the application of the craft index. While the building design embodies the process of making, finished and displayed objects could be read as manifestations of that process, indices of the time and thought behind each one. Over time, the architects in the new school could learn to perceive craft as such; a complex footprint of a person or people. With every new cycle of the process of making and the creation of every new object, the communities of the school would thrive in an expanding and ever-changing world of craft: the craft of human-made things.

Critical Statement

This capstone is a culmination of five years of undergraduate architectural study at Syracuse University. Images produced here are made in the spirit of the local body of architectural work. Our goal is to reconnect architects with the world of the craftsperson. Through our hand-drawn designs and an extensive discussion on the meaning of craft, we hope to change the way architecture students – future professional architects in the United States – perceive and engage with craft.

We decided early on to carefully craft the process of the thesis. The design work was planned out from the beginning of the year, a format was decided upon, and produced images were analyzed and red-lined every two weeks. This established a structure for systematically gauging the process. As traditional in architectural theses, the work has been shown and discussed with a number of reviewers from the School of Architecture. We decided to further this process of analysis and searched for feedback outside of the school, talking with local craftspeople and professors in other schools within Syracuse University.

We drew all our design work by hand. This approach requires that any “mistakes” remain visible throughout and at the end of the project, further demonstrating the parts of the process of making.

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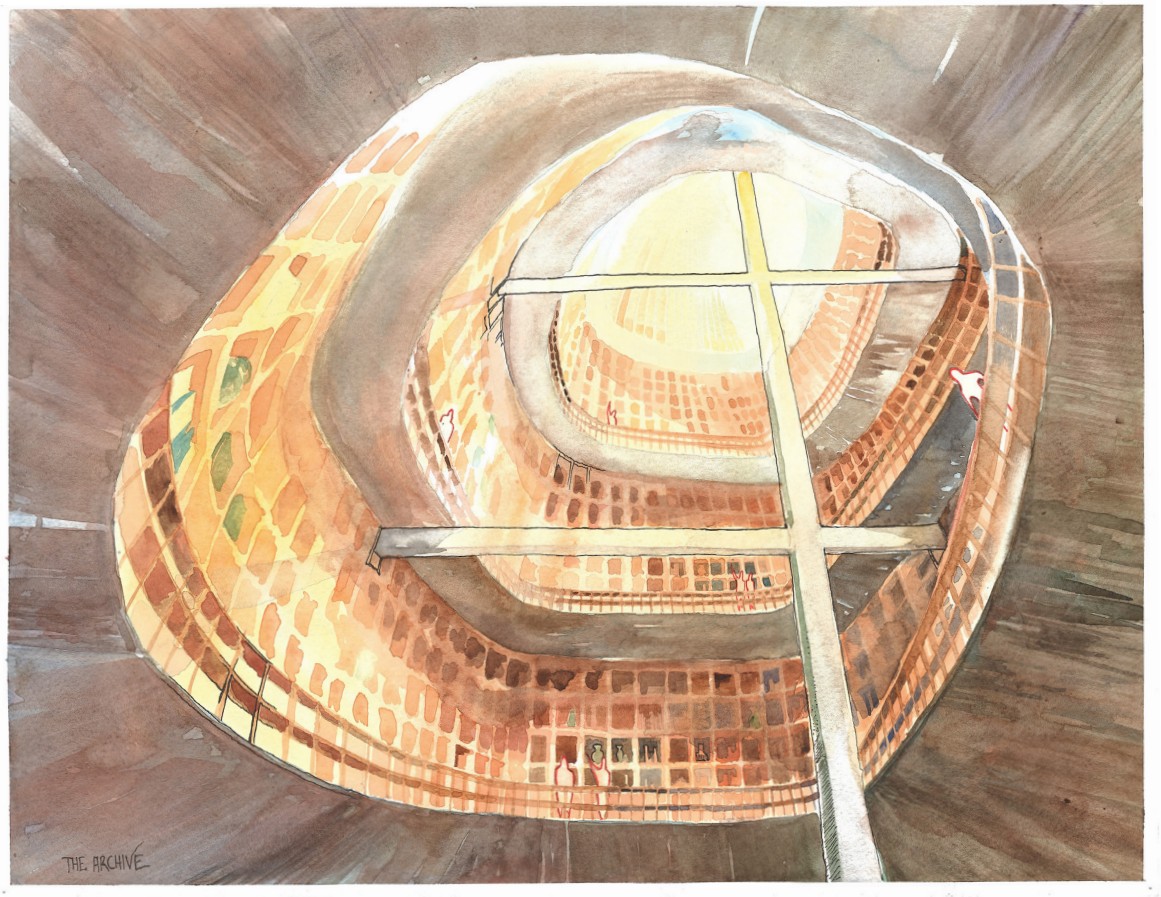
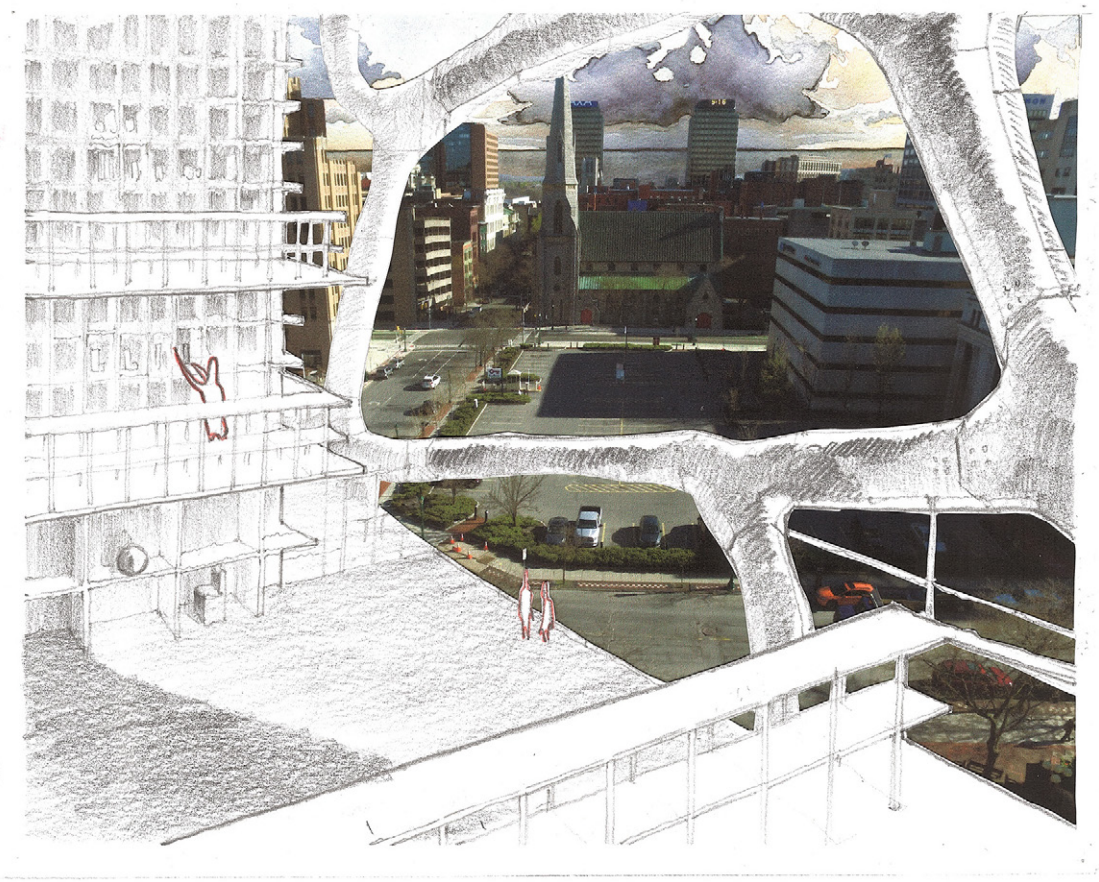
"Как, На Самом Деле, Появился Киевский «Дом с Химерами»: Подлинная История". *ProfiDom*, 21 May 2016. Accessed 17 April 2017.

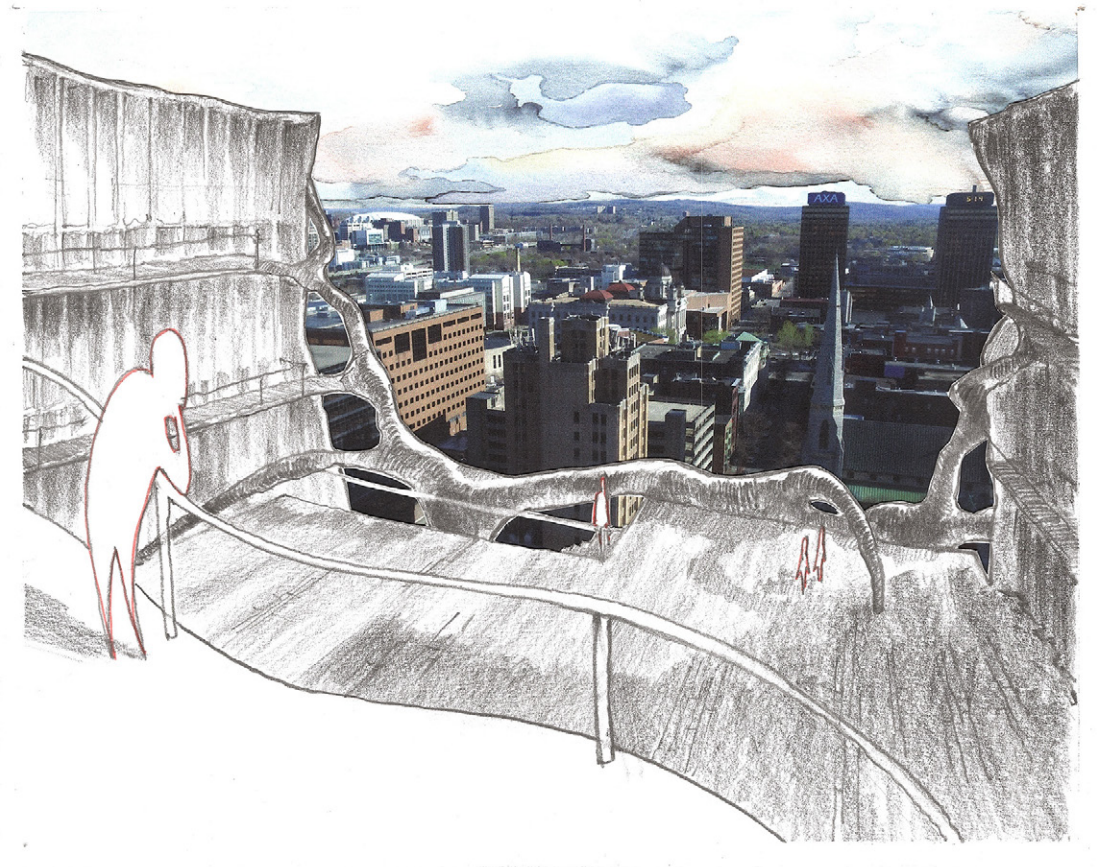
Appendix

The following pages are a curated reproduction of images produced for this project. They outline the design for a new graduate School of Architecture in downtown Syracuse.



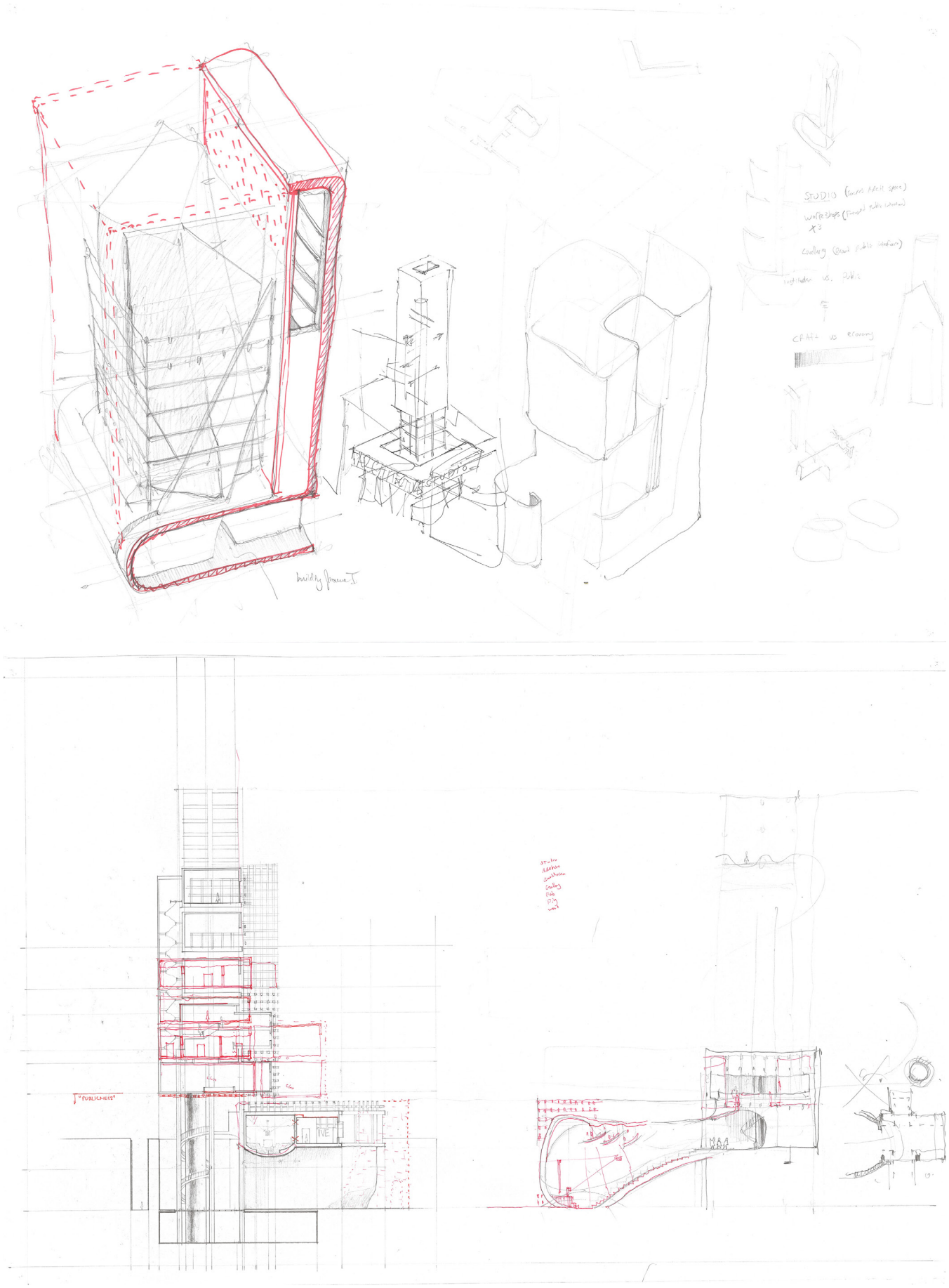
Final Scheme: Exterior and Interior Rendering



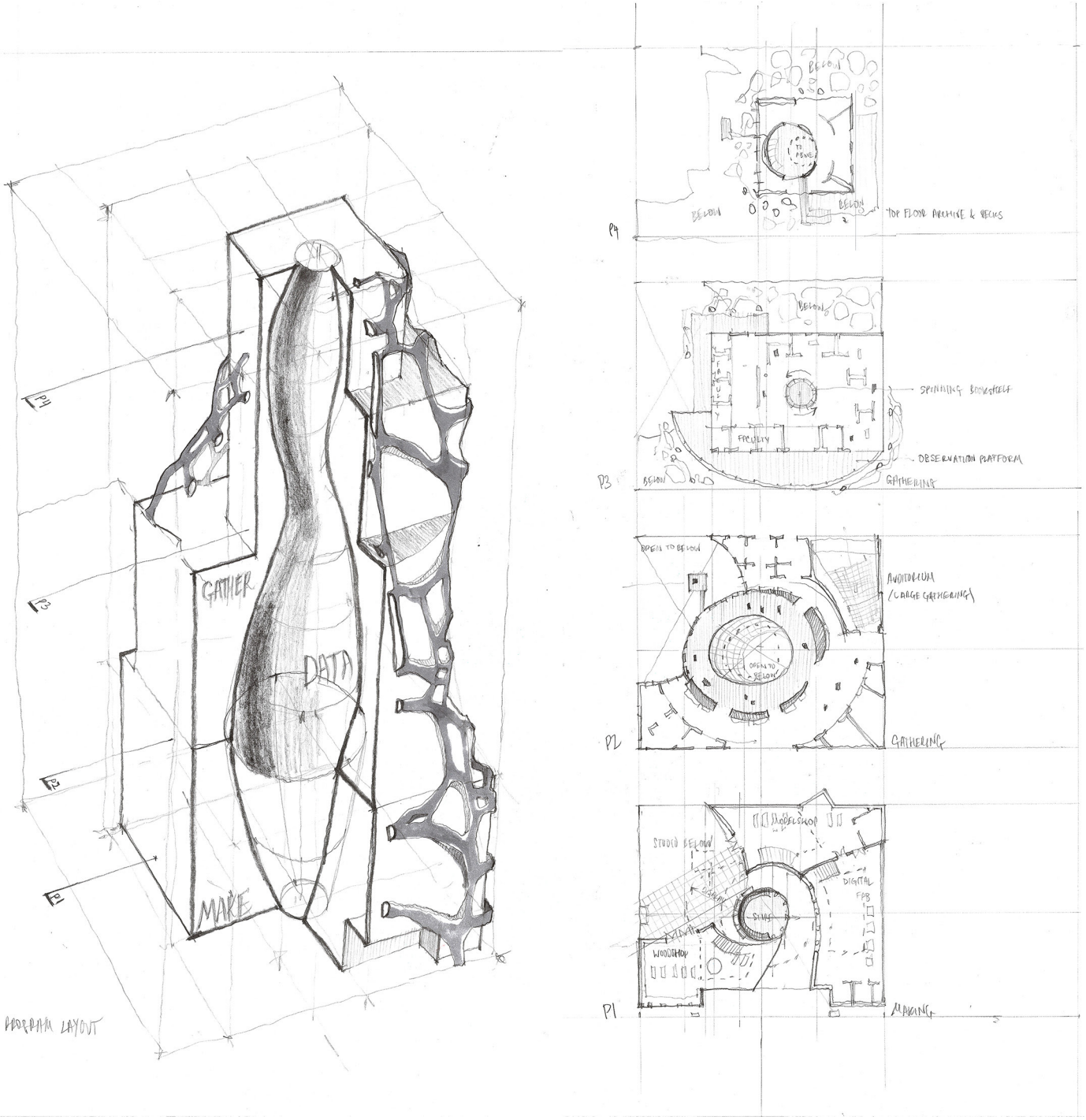


Final Scheme: Views from Gathering space (top) and Roof Garden (bottom)

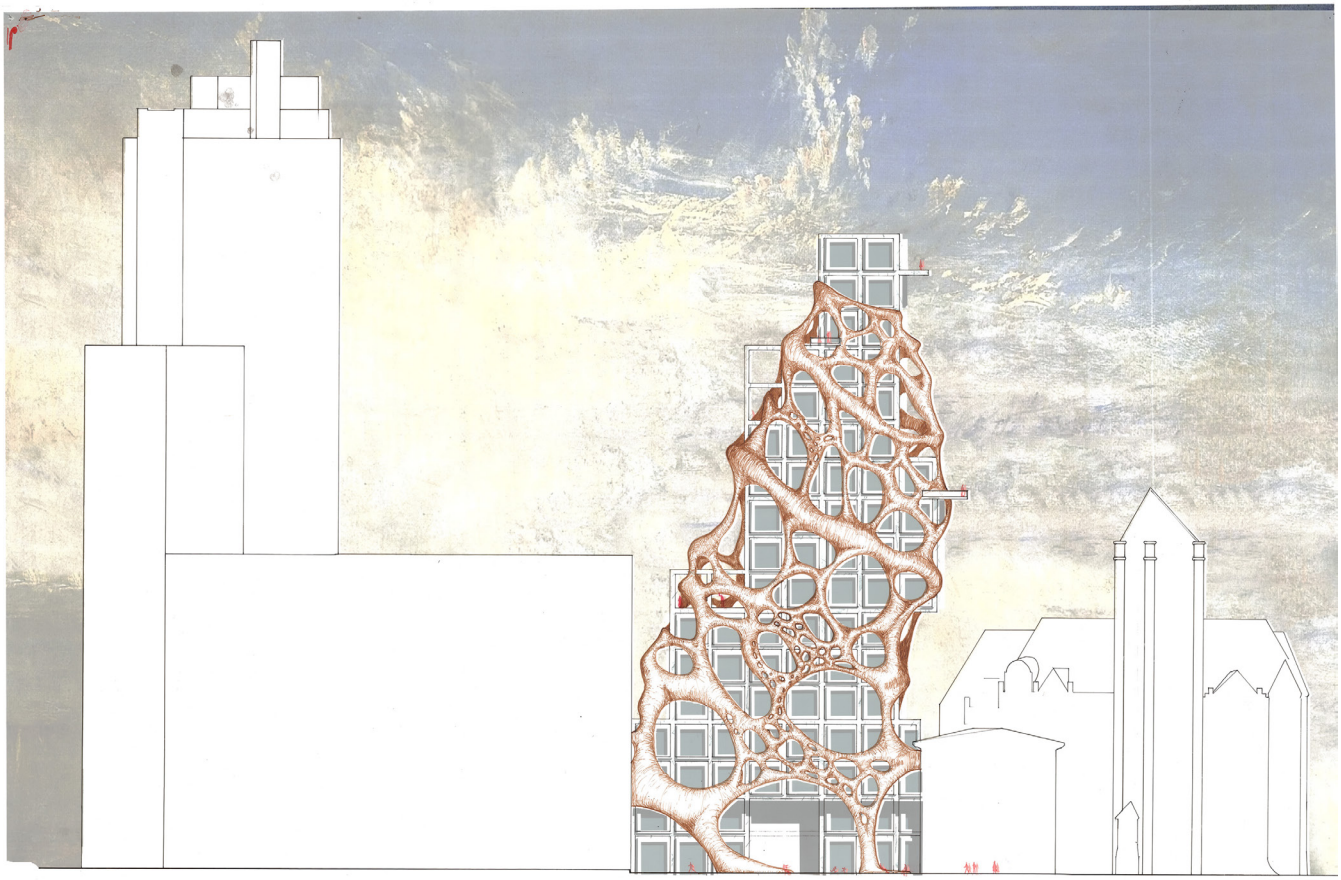
Final Scheme: Views from Highway I-690 (top) and Genesee Street (bottom)

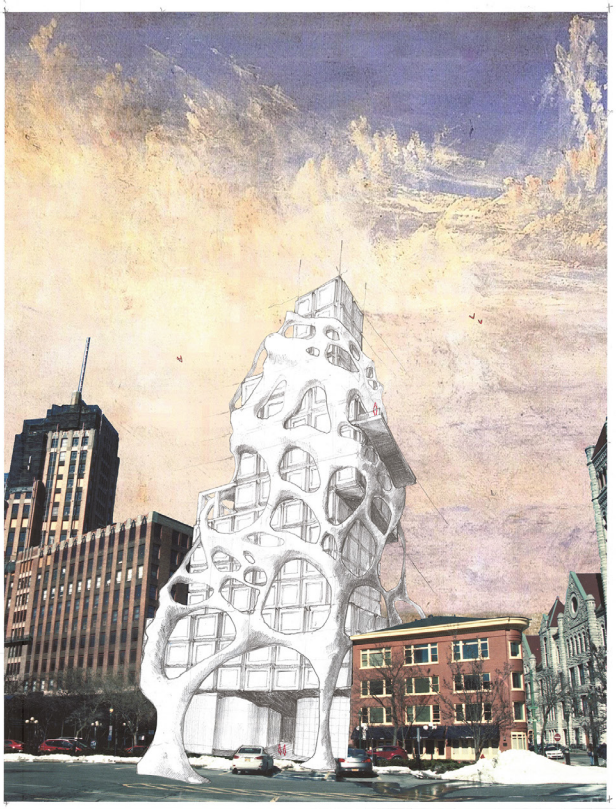


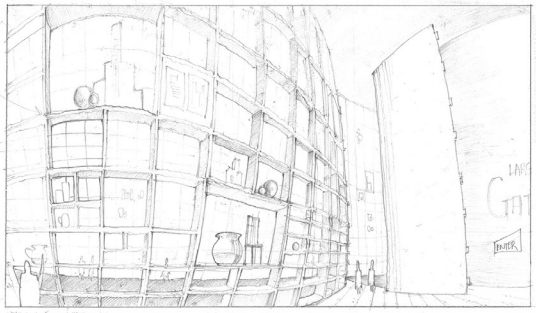
Initial Design: Axonometric (top) and Sections of Building and Auditorium (bottom)

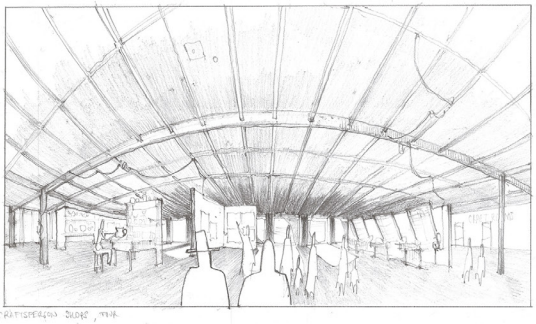


Design Process: Axonometric and Plans at Selected Cuts

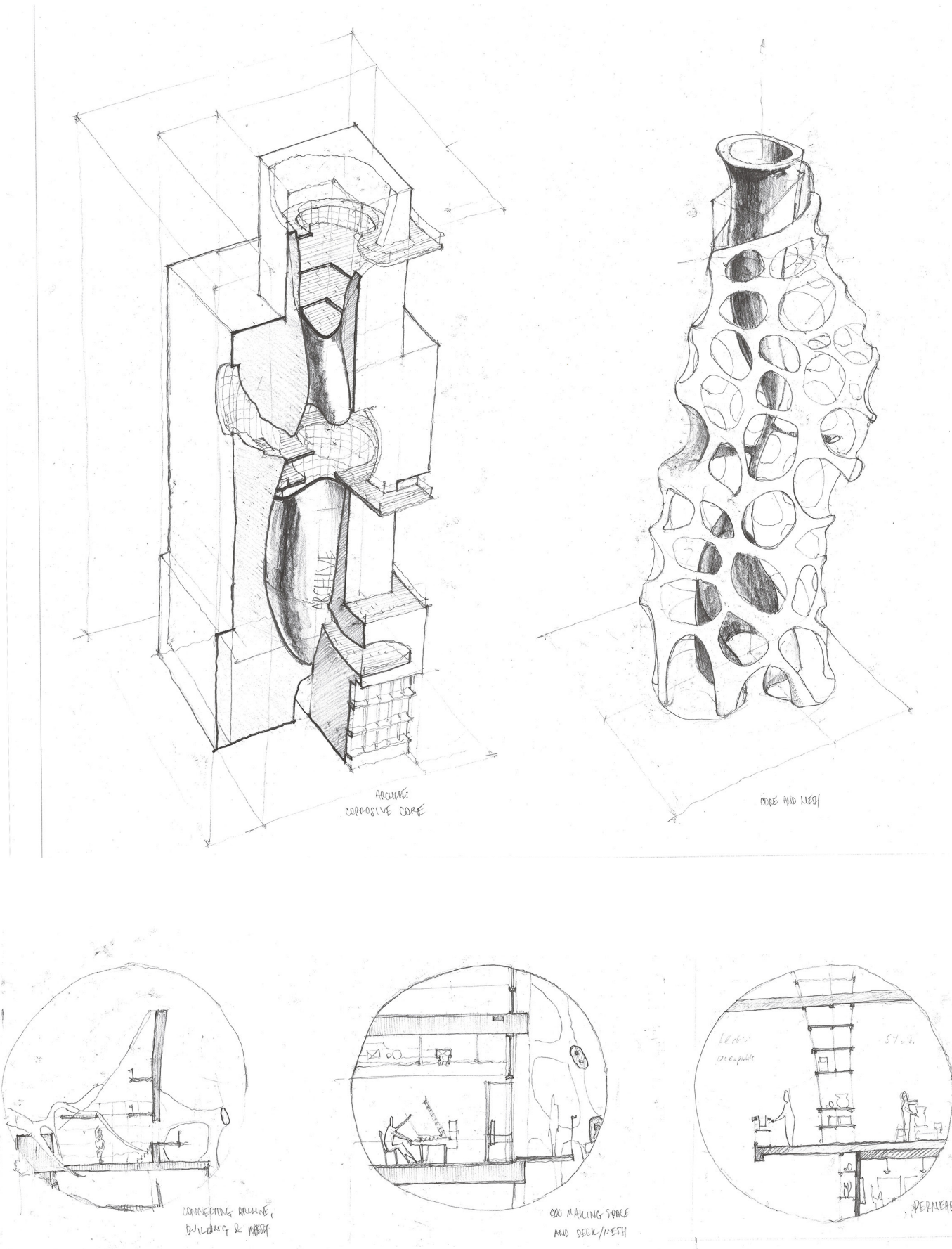




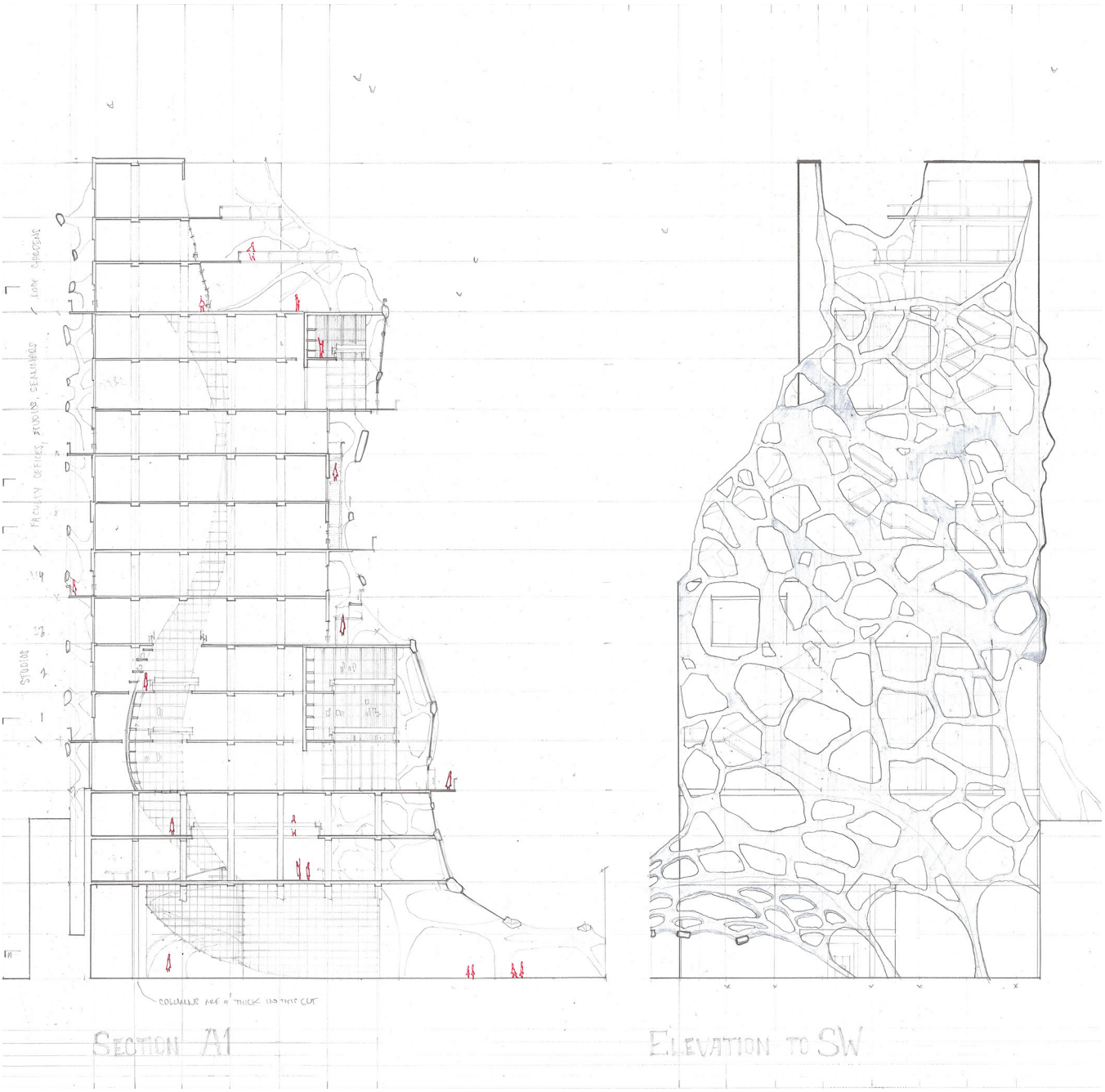




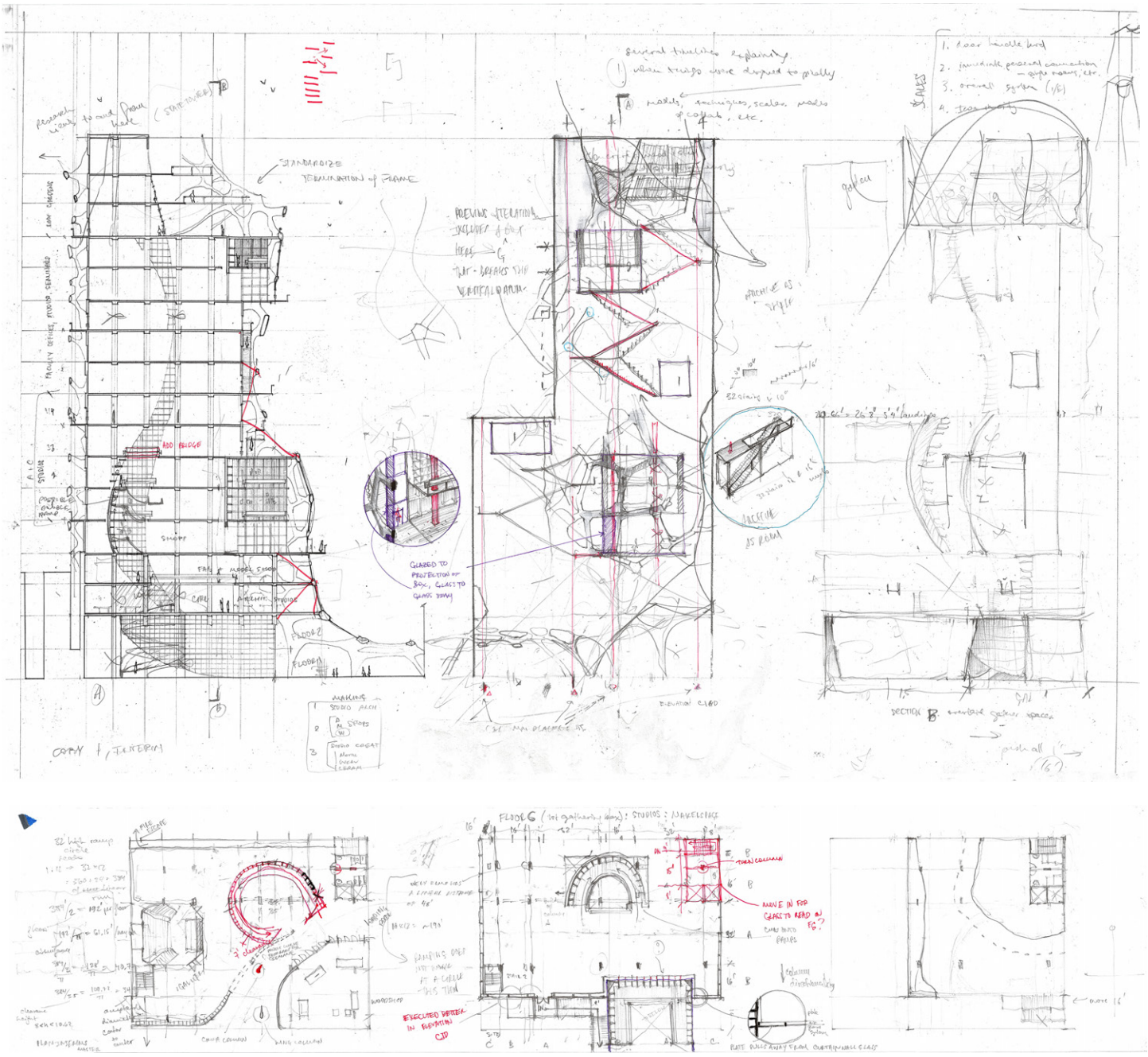
Design Process: Elevation (top), ink on mylar with print underlay
Perspectives (bottom): exterior, ground floor archive, making space



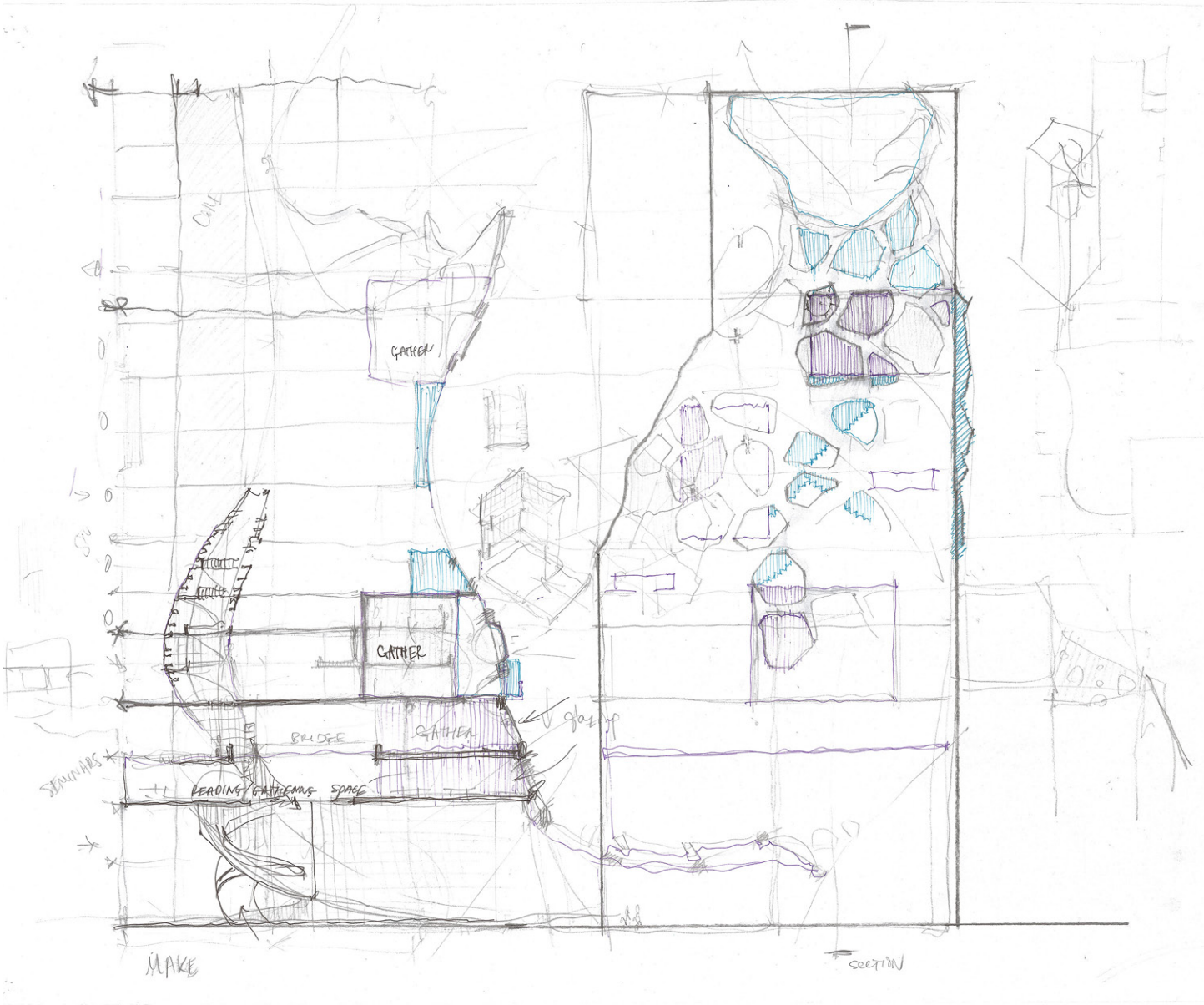
Design Process: Diagrams in Axonometric and Section



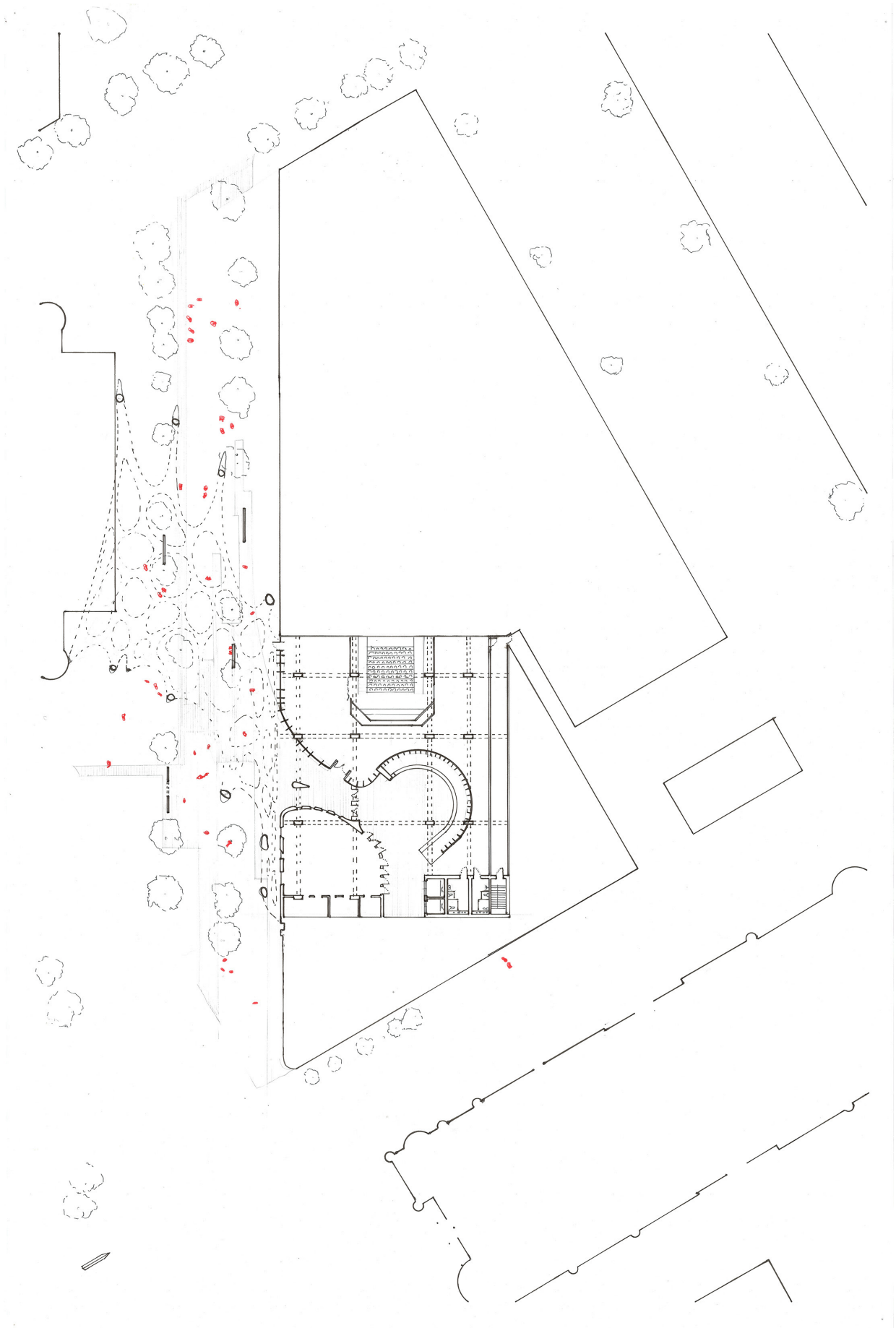
Design Process: Section and Elevation



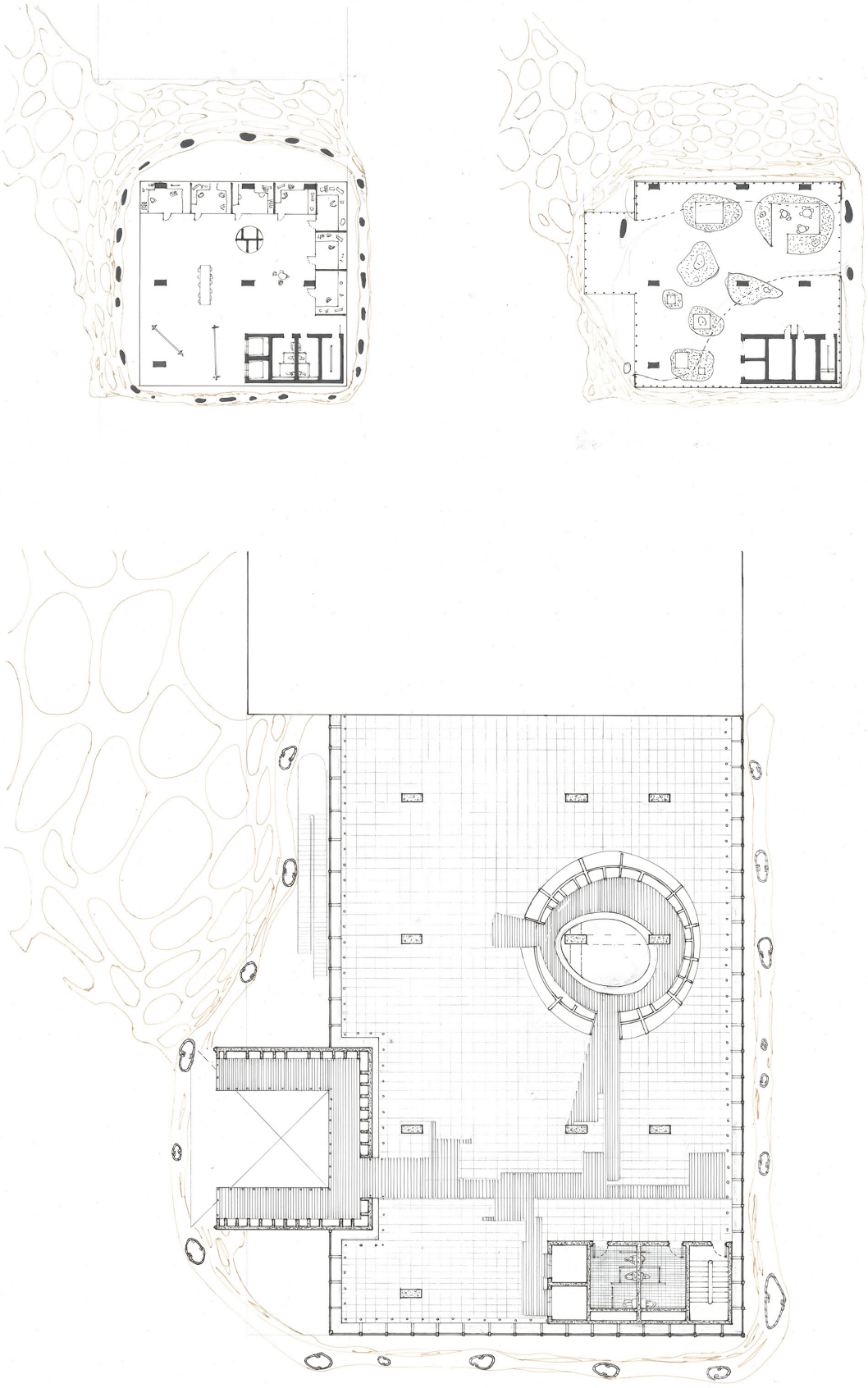
Interim Design: Sections, Plans, and Elevation



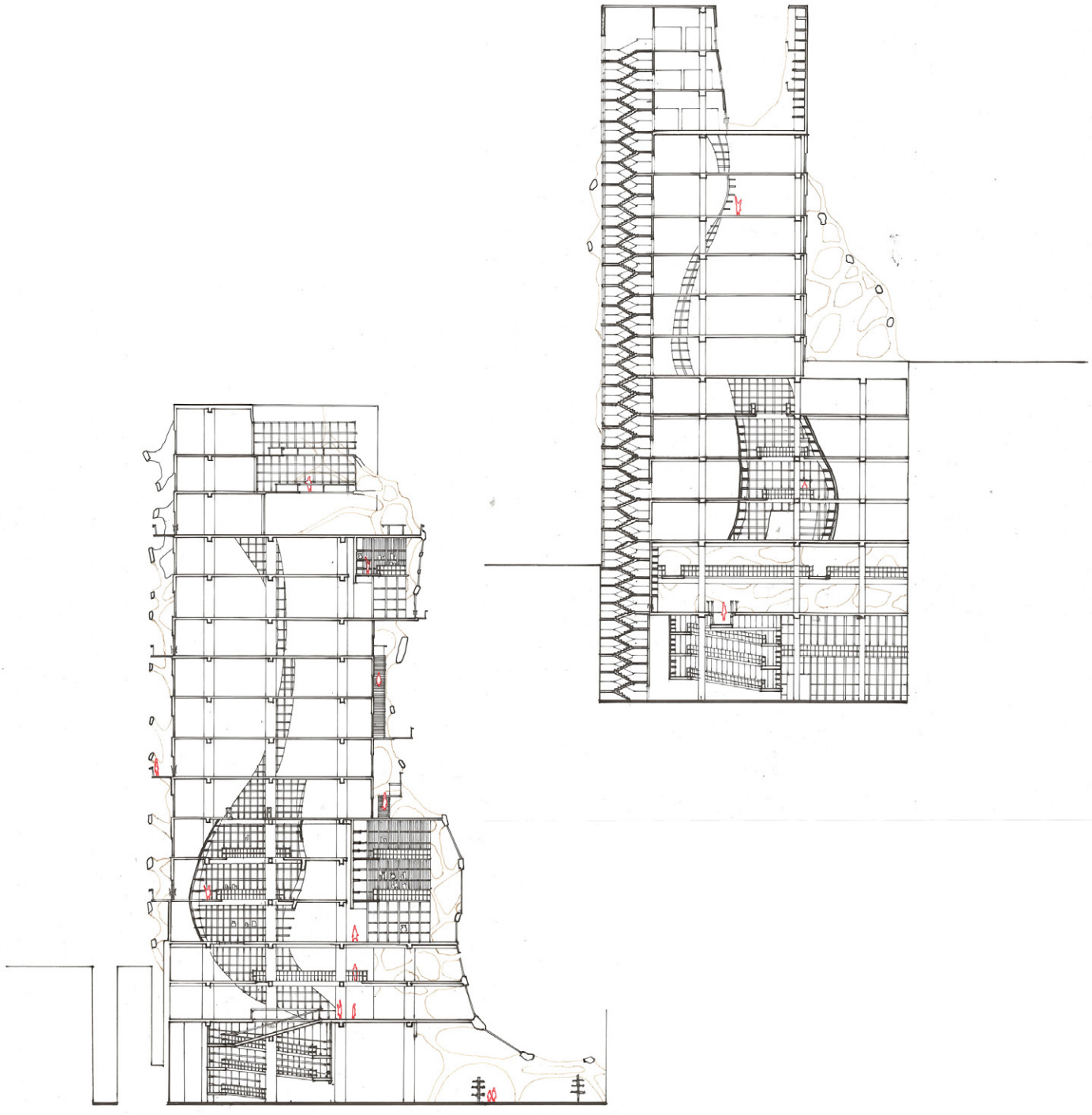
Interim Design: Section and Elevation



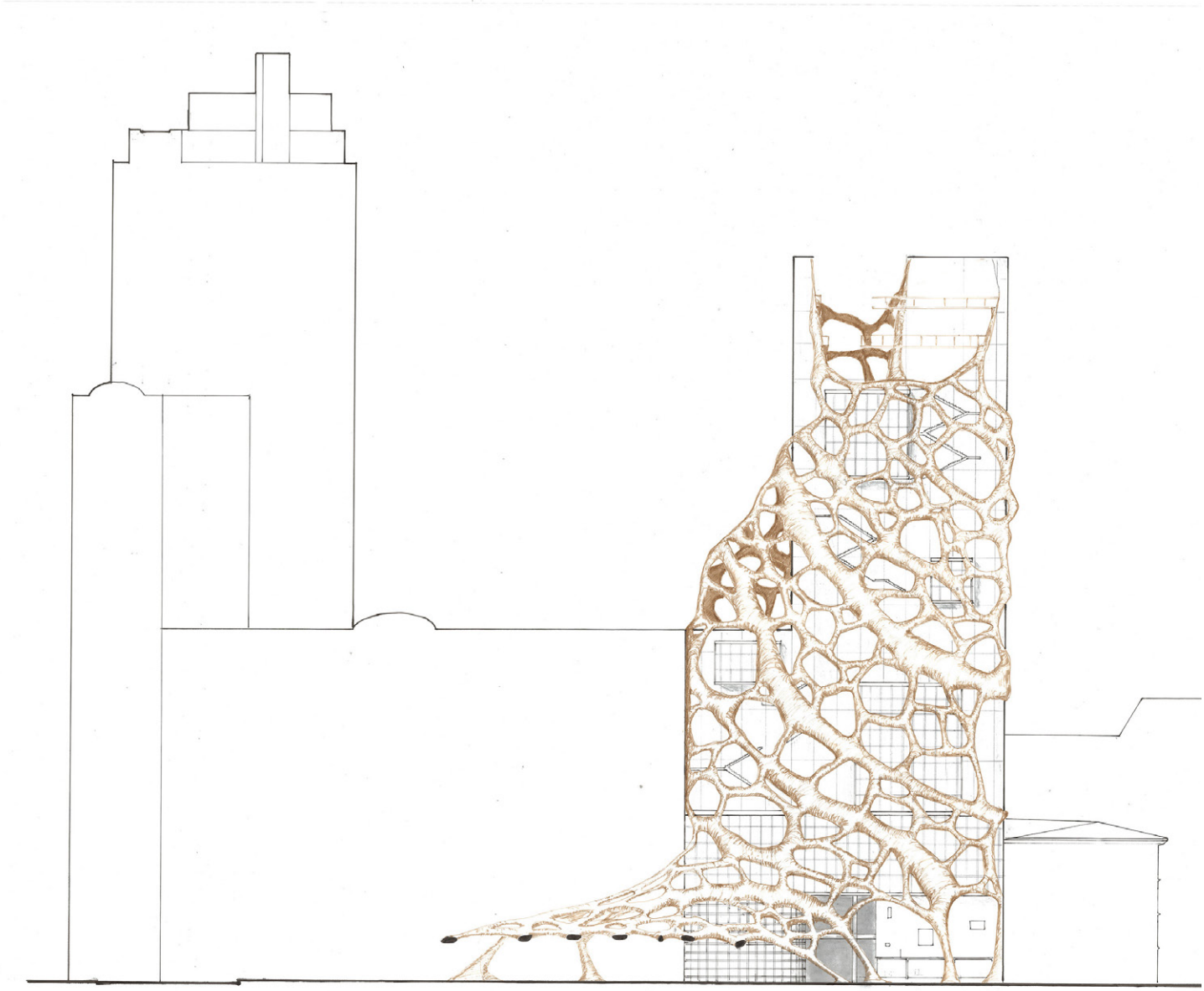
Final Scheme: Ground Floor Plan, top to Northwest



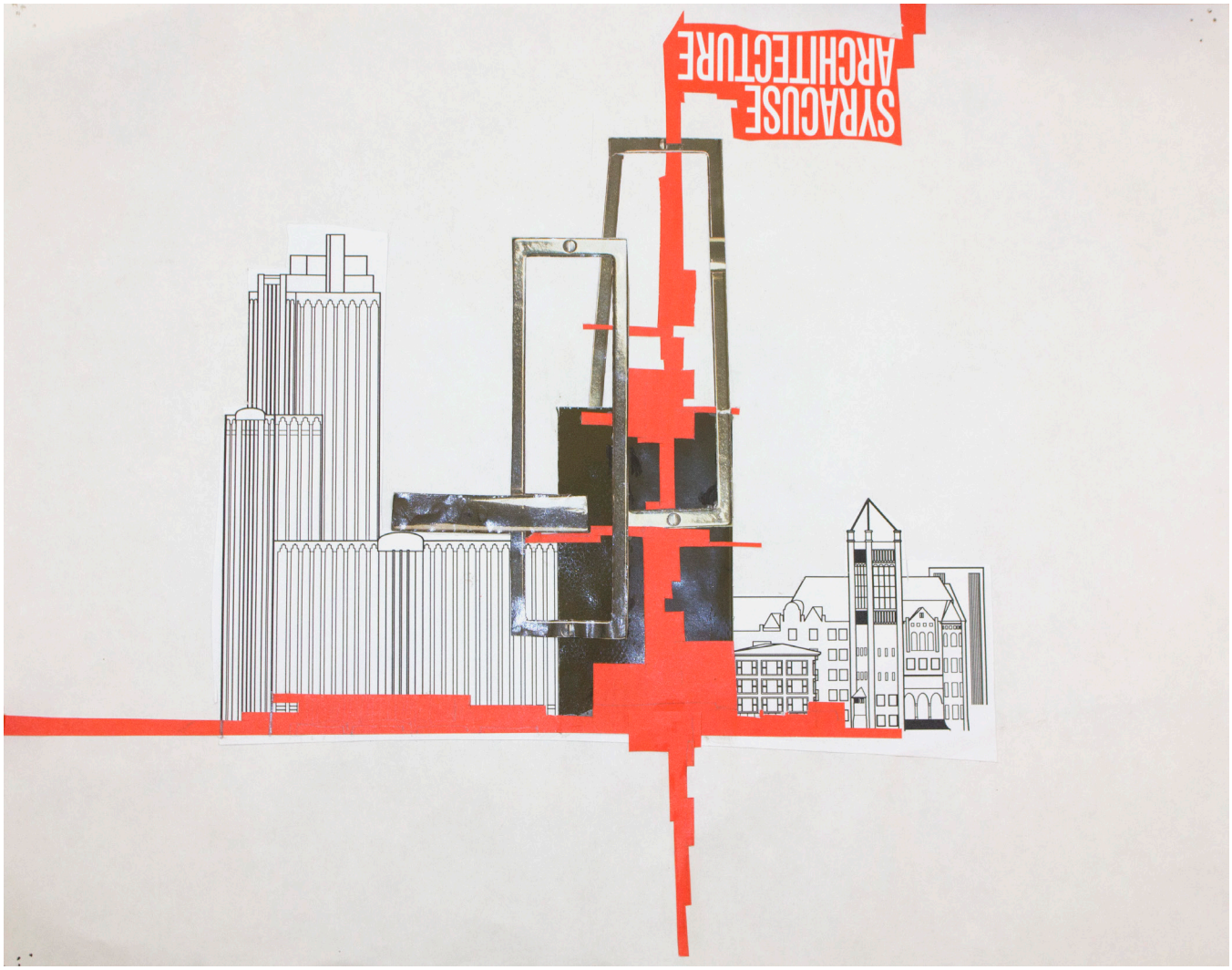
Final Scheme: Plans with top to Northwest
Clockwise from top left: 12th, 15th, 6th Floors.

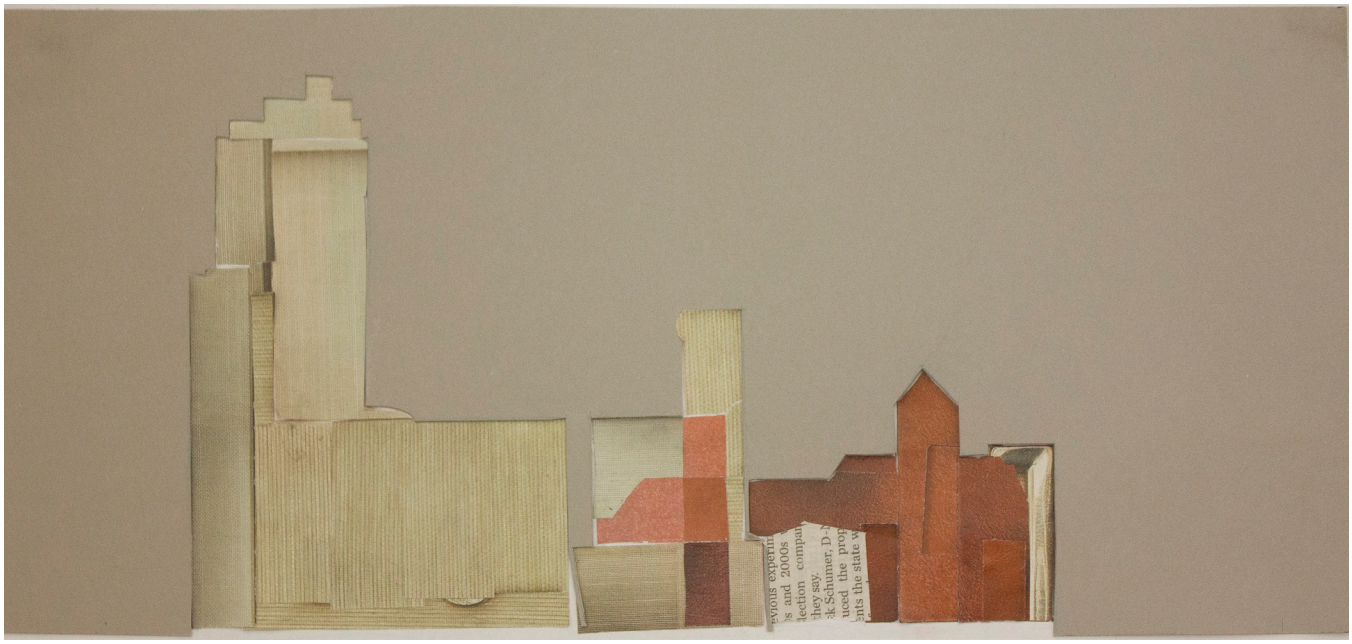


Final Scheme: Sections



Final Scheme: Elevation





Collages of Concept and Context